



BILLING CODE 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XF535

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the Gary Paxton Industrial Park Dock Modification Project

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received a request from the City and Borough of Sitka (CBS) for authorization to take marine mammals incidental to modifying the Gary Paxton Industrial Park (GPIP) dock in Sawmill Cove, Alaska. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities.

DATES: Comments and information must be received no later than *[insert date 30 days after date of publication in the FEDERAL REGISTER]*.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service. Physical comments should be sent to 1315 East-West Highway, Silver Spring, MD 20910 and electronic comments should be sent to *ITP.Daly@noaa.gov*.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments received electronically, including all attachments, must not exceed a 25-megabyte file size. Attachments

to electronic comments will be accepted in Microsoft Word or Excel or Adobe PDF file formats only. All comments received are a part of the public record and will generally be posted online at www.nmfs.noaa.gov/pr/permits/incidental/construction.htm without change. All personal identifying information (*e.g.*, name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Jaclyn Daly, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the applications and supporting documents, as well as a list of the references cited in this document, may be obtained online at: www.nmfs.noaa.gov/pr/permits/incidental/construction.htm. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

An authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant), and if the

permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

NMFS has defined “negligible impact” in 50 CFR 216.103 as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

NMFS has defined “unmitigable adverse impact” in 50 CFR 216.103 as an impact resulting from the specified activity:

- 1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) causing the marine mammals to abandon or avoid hunting areas; (ii) directly displacing subsistence users; or (iii) placing physical barriers between the marine mammals and the subsistence hunters; and
- 2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

The MMPA states that the term “take” means to harass, hunt, capture, kill or attempt to harass, hunt, capture, or kill any marine mammal.

Except with respect to certain activities not pertinent here, the MMPA defines “harassment” as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. §§ 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our proposed action with respect to environmental consequences on the human environment.

Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review. This action is consistent with categories of activities identified in CE B4 of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. We will review all comments submitted in response to this notice prior to concluding our NEPA process and making a final decision on the IHA request.

Summary of Request

On May 8, 2017, NMFS received a request from CBS for an IHA to take marine mammals incidental to the GPIP dock modification project in Sawmill Cove, Alaska. On May 26, 2017, NMFS requested additional information and CBS submitted a revised application on June 21, 2017, which NMFS deemed adequate and complete. CBS's request is for harassment only and NMFS concurs that serious injury or mortality is not expected to result from this activity. Therefore, an IHA is appropriate.

CBS is requesting take, by Level A and B harassment, of six species of marine mammals incidental to pile driving and removal within Sawmill Cove, Alaska. Pile driving and removal would occur for 16 days from October 1 through December 31, 2017. No subsequent IHAs would be necessary to complete the project.

Description of Proposed Activity

Overview

CBS is modifying an existing marine and commercial industrial site by removing existing aging docks and installing a new floating dock, small craft float, and transfer bridge. To do so, CBS must remove existing abandoned, creosote-treated piles and install new piles. Pile driving and pile removal associated with this work may result in auditory injury (Level A harassment) and behavioral harassment (Level B harassment). All pile driving and removal would place take at the existing dock facility and occur for 16 days. The purpose of the project is to provide deep water port access, meet modern safety standards, and promote marine commerce in the region.

Dates and Duration

The proposed IHA would be valid from October 1 through December 31, 2017. Removing old timber piles with a vibratory hammer could occur for up to 5 hours per day for 6 days. Removing the temporary template piles could occur for up to 1 hour on 2 additional days. Vibratory pile driving could occur for up to 2 hours per day for 6 days to install the permanent piles while impact pile driving could occur for up to 10 minutes a day for proofing following vibratory pile driving. In total, pile activities are expected to occur for 16 days from October 1 through December 31, 2017.

Specified Geographic Region

Sawmill Cove is a small body of water located near Sitka, Alaska at the mouth of Silver Bay, which opens to the Sitka Sound and Gulf of Alaska (see figures 1 and 2 in application). Bathymetry in Sawmill Cove shows a fairly even seafloor that gradually falls to a depth of approximately 50 feet (ft) (15 meters (m)). To the southeast, Silver Bay is approximately 0.5 miles (mi) (0.8 kilometers (km)) wide, 5.5 mi (8.9 km) long, and 150-250 ft (46-76 m) deep. The

bay is uniform with few rock outcroppings or islands. To the southwest, the Eastern Channel opens to Sitka Sound, dropping off to depths of 400 ft (120 m) approximately 1.6 km (1 mi) southwest of the project site.

Sawmill Cove is an active marine commercial and industrial area. The dock footprint is previously disturbed with abandoned dock structures associated with the former Alaska Pulp Mill. Silver Bay Seafoods' processing plant is located adjacent to the project site. This plant processes herring and salmon (primarily pink salmon).

Detailed Description of Specific Activities

The purpose of the project is to construct a multipurpose docking area that will serve a wide variety of vessels, provide deep water port access to the GPIIP, meet modern standards for safety, and promote marine commerce in the region. The proposed work includes removing 280 abandoned creosote-treated piles located in shallow water, installing a large floating deep-water dock (a repurposed barge measuring 250 ft (76.2 m) x 74 ft (22.6 m) x 19 ft (5.8 m)), small craft float (12 ft (3.7 m) x 100 ft (30.5 m)), and v-shaped float (see Figure 4 and 5 in CBS's application). For access, CBS would also construct a transfer bridge and gangway. To stabilize the shoreline, CBS would install an abutment and retaining wall. Materials and equipment, including the floating dock, would be transported to the project site by barge. While work is conducted in the water, anchored barges would be used to stage construction materials and equipment.

Pile removal and installation are the only activities that may harass marine mammals. To facilitate the work, CBS would construct two dolphin structures to support the floating dock. Each dolphin requires 6 temporary 30-in steel piles to act as a template for installing the permanent piles, 2 permanent 30-in steel batter piles (piles driven at an angle with the vertical to

resist a lateral force) to act as the “legs” of the dolphin, and a single 48-in vertical steel piles which would constitute the center of the dolphin structure. CBS would use an ICE 44B vibratory hammer (12,450 pounds static weight) and a Delmag D46 diesel hammer (max energy 107,280 ft-pounds) to install piles. The existing old timber piles (12-in and 16-in timber) associated with the old dock would be removed by the vibratory hammer if they cannot be pulled out mechanically. The 12 temporary piles used for the template would also be removed following dock completion.

The six permanent piles (four 30-in and two 48-in) would be driven through approximately 60-70 ft (18-21 m) of unconsolidated sand with a vibratory hammer operated at a reduced energy setting, impacted into bedrock, and then anchored into 25-40 ft (7.6-12.2 m) of bedrock with a rock anchor drill and grout. To anchor the piles, a 10-inch casing would be inserted in the center of the pile and a 15.2 centimeter (cm) (6-in) rock anchor drill would be lowered into the casing and used to drill into bedrock. Rock fragments would be removed through the top of the casing. Finally, the drill and casing would be removed and the hole would be filled with grout to secure the pile to bedrock. The casing acts like a cofferdam and would block noise; therefore, drilling is not expected to result in harassment and is not discussed further.

CBS would use only a vibratory hammer to install the 12 temporary template piles (*i.e.*, no impact hammering). Once the project is complete, CBS would remove all 12 temporary piles with the vibratory hammer.

The duration of pile driving and removal varies by pile type (see Table 1 in CBS’s application). CBS would remove up to 60 of the old timber piles per day with a vibratory hammer (5 minutes for each pile) if they cannot be removed mechanically. In total, removing the timber piles could require using a vibratory hammer for up to 5 hours per day for 6 days. Installing each of the 30-inch temporary piles used to set the template would require 30 minutes

of vibratory driving and CBS anticipates installing up to 6 per day (3 hours total). Removing each of these piles is anticipated to take 10 minutes per pile for a total of 1 hour per day. Installing the permanent 30-in piles used to construct each dolphin would require approximately 2 hours of vibratory driving followed by 10 minutes (400 strikes) of impact hammering; one 30-in pile would be installed per day. The 48-in piles require similar installation periods (a maximum 2 hours of vibratory followed by 10 minutes (400 strikes) of impact); one pile would be installed per day. The project schedule is set such that pile driving would occur, at minimum, every other day when the permanent piles are installed (*i.e.*, there would be at least one day break between installing each pile where other activities such as welding would occur). CBS would do the work from October 1 through December 31, 2017.

CBS would carry out pile driving in a manner designed to reduce impacts to marine mammals. The proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see “Proposed Mitigation” and “Proposed Monitoring and Reporting”).

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS’s Stock Assessment Reports (SAR; www.nmfs.noaa.gov/pr/sars/) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS’s website (www.nmfs.noaa.gov/pr/species/mammals/).

Table 1 lists all species with expected potential for occurrence in Sawmill Cove and Silver Bay and summarizes information related to the population or stock, including regulatory

status under the MMPA and ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2016). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. 2016 SARs (*e.g.*, Muto et al. 2017). All values presented in Table 1 are the most recent available at the time of publication and are available in the 2016 SARs (Muto et al., 2017).

NMFS identifies 14 species may potentially occur in the action area: humpback whale (*Megaptera novaeangliae*), fin whale (*Balaenoptera physalis*), North Pacific right whale (*Eubalaena japonica*), gray whale (*Eschrichtius robustus*), minke whale (*Balaenoptera acutorostrata*), sperm whale (*Physeter macrophalus*), killer whale (*Orcinus orca*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), Cuvier's beaked whale (*Ziphius cavirostris*), harbor porpoise (*Phocoena phocoena*), Dall's porpoise (*P. dalli*), Steller sea lion (*Eumetopias jubatus*), Northern fur seal (*Callorhinus ursinus*) and Pacific harbor seal (*Phoca vitulina*). Of these, one pinniped (Northern fur seal) and eight cetacean species and are considered extralimital

species (*i.e.*, those that do not normally occur in a given area but for which there are one or more occurrence records): the North Pacific right whale, gray whale, minke whale, fin whale, sperm whale, Cuvier's beaked whale, Pacific white-sided dolphin, and Dall's porpoise (Straley and Pendall, 2017). Given this, no take is requested for these species and they are not considered further in this proposed IHA.

Table 1. Marine mammals expected to occur within the Action Area, Sitka.

Common name	Scientific name	MMPA Stock	ESA/MMPA status; Strategic (Y/N) ¹	Stock abundance Nbest, (CV, N _{min} , most recent abundance survey) ²	Occurrence	PBR	Annual M/SI ³
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)							
Family Balaenidae							
Humpback whale	<i>Megaptera novaeangliae</i>	Central North Pacific	E, D,Y	10,103 (0.3, 7,890, 2006)	Frequent	83	21
Order Cetartiodactyla – Cetacea – Superfamily Odontoceti (toothed whales, dolphins, and porpoises)							
Family Delphinidae							
Killer whale	<i>Orcinus orca</i>	Alaska Resident	-, N	2,347 (N/A, 2,347, 2012) ⁴	Infrequent	23.4	1
		Northern Resident	-, N	261 (N/A, 261, 2011) ⁴		1.96	0
		Gulf of Alaska, Aleutian Islands, Bering Sea Transient	-, N	587 (N/A, 587, 2012) ⁴		5.9	0.6
		West Coast Transient	-, N	243 (N/A, 243, 2009) ⁴		2.4	1
Family Phocoenidae							
Harbor porpoise	<i>Phocoena phocoena</i>	Southeast Alaska	-, Y	975 (0.10, 896, 2012) ⁵	Infrequent	8.9 ⁵	34 ⁵
Order Carnivora – Superfamily Pinnipedia							
Family Otariidae (eared seals and sea lions)							
Steller sea lion	<i>Eumatopia jubatus</i>	Western U.S.	E, D; Y	49,497 (N/A, 49,497, 2014)	Common	297	233
		Eastern U.S.	-, D, Y	60,131- 74,448 (N/A, 36,551, 2013)		1,645	92.3
Family Phocidae (earless seals)							
Harbor seal		Sitka/Chatham Strait	-, N	14,855 (-,13,212, 2011)	Common	555	77

¹ESA status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

²NMFS marine mammal stock assessment reports online at: www.nmfs.noaa.gov/pr/sars/. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable (N/A).

³These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, ship strike).

⁴N is based on counts of individual animals identified from photo-identification catalogs.

⁵ In the SAR for harbor porpoise (NMFS 2017), NMFS identified population estimates and PBR for porpoises within inland Southeast Alaska waters (these abundance estimates have not been corrected for g(0); therefore, they are likely conservative). The calculated PBR is considered unreliable for the entire stock because it is based on estimates from surveys of only a portion (the inside waters of Southeast Alaska) of the range of this stock as currently designated. The Annual M/SI is for the entire stock, including coastal waters.

Pinnipeds

Steller Sea Lion

The Steller sea lion is the largest of the eared seals, ranging along the North Pacific Rim from northern Japan to California, with centers of abundance and distribution in the Gulf of Alaska and Aleutian Islands. Steller sea lions were listed as threatened range-wide under the ESA on November 26, 1990 (55 FR 49204). Subsequently, NMFS published a final rule designating critical habitat for the species as a 20 nautical mile buffer around all major haul-outs and rookeries, as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas (58 FR 45269; August 27, 1993). In 1997, NMFS reclassified Steller sea lions as two distinct population segments (DPSs) based on genetic studies and other information (62 FR 24345; May 5, 1997). Steller sea lion populations that primarily occur west of 144° W (Cape Suckling, Alaska) comprise the western DPS (wDPS), while all others comprise the eastern DPS (eDPS); however, there is regular movement of both DPSs across this boundary (Jemison *et al.* 2013). Upon this reclassification, the wDPS became listed as endangered while the eDPS remained as threatened (62 FR 24345; May 5, 1997). In November 2013, the eDPS was delisted (78 FR 66140). Based on recent observations of branded animals in Southeast Alaska, NMFS estimates that 98 percent of Steller seas lion occurring within the action area belong to the eDPS, leaving 2 percent to the wDPS (Suzie Teerlink, pers. comm, May 19, 2017). The current abundance estimate for the eDPS in Alaska is between 60,131-74,448, and 49,497 animals for the wDPS (Muto *et al.* 2017).

Steller sea lions forage in nearshore and pelagic waters where they are opportunistic predators. They feed primarily on a wide variety of fishes and cephalopods. Because the action area contains a herring processing plant, animals may linger in the area to feed opportunistically. However, strong residency time may be limited because the plant does not operate from October through March (when pile activities would occur). Anecdotal evidence from staff at the fish processing plant indicate that multiple (up to 10) Steller sea lions may reside in the area for multiple days (pers.comm, Solstice, July 5, 2017).

Steller sea lions use terrestrial haulout sites to rest and take refuge. They also gather on well-defined, traditionally used rookeries to pup and breed. These habitats are typically gravel, rocky, or sand beaches; ledges; or rocky reefs. There are no established haul-outs in the action area; however, individuals in the action area may rest on rocks and along the shoreline intermittently. No critical habitat for this species is designated in Southeast Alaska.

Steller sea lions are included in Alaska subsistence harvests. Since subsistence harvest surveys began in 1992, the number of households hunting and harvesting sea lions has remained relatively constant at low levels (Wolf *et al.* 2013). In 2012, the community of Sitka had an estimated subsistence take of 1 Steller sea lion (Wolf *et al.* 2013).

Harbor Seal

Harbor seals range from Baja California north along the west coasts of Washington, Oregon, California, British Columbia, and Southeast Alaska; west through the Gulf of Alaska, Prince William Sound, and the Aleutian Islands; and north in the Bering Sea to Cape Newenham and the Pribilof Islands. They haul out on rocks, reefs, beaches, and drifting glacial ice, and feed in marine, estuarine, and occasionally fresh waters. Harbor seals are generally non-migratory,

with local movements associated with such factors as tides, weather, season, food availability, and reproduction.

Harbor seals in Alaska are partitioned into 12 separate stocks based largely on genetic structure: (1) the Aleutian Islands stock, (2) the Pribilof Islands stock, (3) the Bristol Bay stock, (4) the North Kodiak stock, (5) the South Kodiak stock, (6) the Prince William Sound stock, (7) the Cook Inlet/Shelikof stock, (8) the Glacier Bay/Icy Strait stock, (9) the Lynn Canal/Stephens Passage stock, (10) the Sitka/Chatham stock, (11) the Dixon/Cape Decision stock, and (12) the Clarence Strait stock. Only the Sitka/Chatham stock is considered in this proposed IHA. The range of this stock includes Cape Bingham south to Cape Ommaney and the adjacent coastal and inshore waters, including the project area.

Within the action area, harbor seals are present year round with peak abundance February through April (Straley and Pendell 2017). Monthly group size ranges from 0-5 animals but in low numbers. Average group size is 1-2 individuals (Straley and Pendell 2017). Similar to Steller sea lions, harbor seals may linger in the action area for multiple days; however, no designated haul-outs are within close proximity.

Harbor seals are included in Alaska subsistence harvests. Since subsistence harvest surveys began in 1992, there have been declines in the number of households hunting and harvesting seals in Southeast Alaska (Wolf et al. 2013). In 2012, the community of Sitka had an estimated subsistence take of 49 harbor seals (Wolf et al. 2013).

Cetaceans

Humpback whale

The humpback whale is distributed worldwide in all ocean basins. In winter, most humpback whales occur in the subtropical and tropical waters of the Northern and Southern

Hemispheres, and migrate to high latitudes in the summer to feed. The historic summer feeding range of humpback whales in the North Pacific encompassed coastal and inland waters around the Pacific Rim from Point Conception, California, north to the Gulf of Alaska and the Bering Sea, and west along the Aleutian Islands to the Kamchatka Peninsula and into the Sea of Okhotsk and north of the Bering Strait (Johnson and Wolman 1984).

Under the MMPA, there are three stocks of humpback whales in the North Pacific: (1) the California/Oregon/Washington and Mexico stock, consisting of winter/spring populations in coastal Central America and coastal Mexico which migrate to the coast of California to southern British Columbia in summer/fall; (2) the central North Pacific stock, consisting of winter/spring populations of the Hawaiian Islands which migrate primarily to northern British Columbia/Southeast Alaska, the Gulf of Alaska, and the Bering Sea/Aleutian Islands; and (3) the western North Pacific stock, consisting of winter/spring populations off Asia which migrate primarily to Russia and the Bering Sea/Aleutian Islands. The central North Pacific stock is the only stock that is found near the project activities.

On September 8, 2016, NMFS published a final rule dividing the globally listed endangered species into 14 DPSs, removing the worldwide species-level listing, and in its place listing four DPSs as endangered and one DPS as threatened (81 FR 62259; effective October 11, 2016). Two DPSs (Hawaii and Mexico) are potentially present within the action area. The Hawaii DPS is not listed and the Mexico DPS is listed as threatened under the ESA. The Hawaii DPS is estimated to contain 11,398 animals where the Mexico DPS is estimated to contain 3,264 animals.

Within the action area, humpback whales are seen most frequently from September through February although sighting may extend into April (Straley and Pendell 2017). Survey

data indicates that the typical group size for humpback whales in the area is between 2 and 4 whales, and approximately 2.18 whales occur in the area per day. The maximum group size is unknown. When present in the area, humpback whales are foraging primarily on herring.

Killer Whale

Killer whales have been observed in all oceans and seas of the world, but the highest densities occur in colder and more productive waters found at high latitudes. Killer whales are found throughout the North Pacific, and occur along the entire Alaska coast, in British Columbia and Washington inland waterways, and along the outer coasts of Washington, Oregon, and California (Muto *et al.* 2017).

Based on data regarding association patterns, acoustics, movements, and genetic differences, eight killer whale stocks are now recognized: (1) the Alaska Resident stock; (2) the Northern Resident stock; (3) the Southern Resident stock; (4) the Gulf of Alaska, Aleutian Islands, and Bering Sea Transient stock; (5) the AT1 Transient stock; (6) the West Coast transient stock, occurring from California through southeastern Alaska; and (7) the Offshore stock, and (8) the Hawaiian stock. Only the Alaska resident; Northern resident; Gulf of Alaska, Aleutian Islands, and Bering Sea Transient (Gulf of Alaska transient); and the West coast transient stocks are considered in this application because other stocks occur outside the geographic area under consideration. Any of these four stocks could be seen in the action area; however, the Northern resident stock is most likely to occur in the area. The trend for the Northern resident stock is an increasing population with an average of 2.1 percent annual increase over a 36 year time period. For all other stocks, population trends are unknown.

In the action area, killer whales are known to occur but their sightings are unpredictable. Between 0 and 12 killer whales can occur within the project area with typical group size of between four and eight whales with a maximum group size of eight (Straley and Pendell 2017).

Harbor Porpoise

The harbor porpoise inhabits temperate, subarctic, and arctic waters. In the eastern North Pacific, harbor porpoises range from Point Barrow, Alaska, to Point Conception, California. Harbor porpoise primarily frequent coastal waters and occur most frequently in waters less than 100 m deep (Hobbs and Waite 2010). They may occasionally be found in deeper offshore waters.

In Alaska, harbor porpoises are currently divided into three stocks, based primarily on geography: (1) the Southeast Alaska stock - occurring from the northern border of British Columbia to Cape Suckling, Alaska, (2) the Gulf of Alaska stock - occurring from Cape Suckling to Unimak Pass, and (3) the Bering Sea stock - occurring throughout the Aleutian Islands and all waters north of Unimak Pass. Only the Southeast Alaska stock is considered in this application because the other stocks are not found in the geographic area under consideration. The 2016 SAR for this stock further delineated population estimates (Muto *et al.* 2017). The total estimated annual level of human-caused mortality and serious injury for Southeast Alaska harbor porpoise ($n = 34$) exceeds the calculated PBR of 8.9 porpoise. However, the calculated PBR is considered unreliable for the entire stock because it is based on estimates from surveys of only a portion (the inside 70% of Southeast Alaska) of the range of this stock as currently designated. Because the total stock abundance estimates are more than 8 years old (with the exception of the 2010-2012 abundance estimates provided for the inland waters of Southeast Alaska) and the frequency of incidental mortality and serious injury in U.S. commercial fisheries throughout Southeast Alaska is not known, the Southeast Alaska stock of

harbor porpoise is classified as a strategic stock. Population trends and status of this stock relative to its Optimum Sustainable Population are currently unknown.

There are no subsistence use of this species; however, as noted above, entanglement in fishing gear contributes to human-caused mortality and serious injury. Muto *et al.* (2017) also reports harbor porpoise are vulnerable to physical modifications of nearshore habitats resulting from urban and industrial development (including waste management and nonpoint source runoff) and activities such as construction of docks and other over-water structures, filling of shallow areas, dredging, and noise (Linnenschmidt *et al.* 2013).

In the action area, harbor porpoises are considered infrequent but could occur during any month with average group size of five individuals; maximum group size is eight individuals (Straley and Pendell 2017).

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.* 1995; Wartzok and Ketten 1999; Au and Hastings 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). Subsequently, NMFS (2016) described generalized hearing ranges for these marine mammal hearing groups.

Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. The functional groups and associated frequencies along with likely best hearing ranges are provided below (note that these frequency ranges correspond to the range for the composite group, with the entire range not necessarily reflecting the capabilities of every species within that group). For more detail concerning these groups and associated frequency ranges, please see NMFS (2016) for a review of available information.

- Low-frequency cetaceans (mysticetes): generalized hearing is estimated to occur between approximately 7 Hz and 35 kHz;
- Mid-frequency cetaceans (larger toothed whales, beaked whales, and most delphinids): generalized hearing is estimated to occur between approximately 150 Hz and 160 kHz;
- High-frequency cetaceans (porpoises, river dolphins, and members of the genera *Kogia* and *Cephalorhynchus*; including two members of the genus *Lagenorhynchus*, on the basis of recent echolocation data and genetic data): generalized hearing is estimated to occur between approximately 275 Hz and 160 kHz;
- Pinnipeds in water; Phocidae (true seals): generalized hearing is estimated to occur between approximately 50 Hz to 86 kHz; and
- Pinnipeds in water; Otariidae (eared seals): generalized hearing is estimated to occur between 60 Hz and 39 kHz.

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.*, 2006; Kastelein *et al.*, 2009; Reichmuth and Holt, 2013).

Five marine mammal species (three cetacean and two pinniped species) have the reasonable potential to co-occur with the proposed survey activities. Of the cetacean species that may be present, the humpback whale is classified as low-frequency cetaceans (*i.e.*, mysticete species), the killer whale is classified as a mid-frequency cetacean (*i.e.*, all delphinid and ziphiid species and the sperm whale), and the harbor porpoise is classified as high-frequency cetaceans (*i.e.*, porpoises and *Kogia* spp.). The Steller sea lion is classified as an otariid while the harbor seal is classified as a phocid.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The “Estimated Take by Incidental Harassment” section later in this document will include a quantitative analysis of the number of individuals that are expected to be taken by this activity. The “Negligible Impact Analysis and Determination” section will consider the content of this section, the “Estimated Take by Incidental Harassment” section, and the “Proposed Mitigation” section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

Acoustic Effects

The ADOT's construction work involving in-water pile driving and pile removal could effect marine mammals by exposing them to elevated noise levels in the vicinity of the activity area leading to an auditory threshold shifts (TS). NMFS defines a noise-induced TS as “a change, usually an increase, in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level” (NMFS, 2016). The amount of threshold shift is customarily expressed in dB (ANSI 1995, Yost 2007). A TS can be permanent or temporary. As described in NMFS (2016), there are numerous factors to consider when examining the consequence of TS, including, but not limited to, the signal temporal pattern (*e.g.*, impulsive or non-impulsive), likelihood an individual would be exposed for a long enough duration or to a high enough level to induce a TS, the magnitude of the TS, time to recovery (seconds to minutes or hours to days), the frequency range of the exposure (*i.e.*, spectral content), the hearing and vocalization frequency range of the exposed species relative to the signal's frequency spectrum (*i.e.*, how animal uses sound within the frequency band of the signal; *e.g.*, Kastelein *et al.* 2014), and the overlap between the animal and the source (*e.g.*, spatial, temporal, and spectral). When analyzing the auditory effects of noise exposure, it is often helpful to broadly categorize sound as either impulsive — noise with high peak sound pressure, short duration, fast rise-time, and broad frequency content — or non-impulsive. When considering auditory effects, vibratory pile driving is considered to be non-impulsive source while impact pile driving is treated as an impulsive source.

Permanent Threshold Shift (PTS) - NMFS defines PTS as a permanent, irreversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS 2016). Available data from

humans and other terrestrial mammals indicate that a 40 dB threshold shift approximates PTS onset (see NMFS 2016 for review).

Temporary Threshold Shift (TTS) – NMFS defines TTS as a temporary, reversible increase in the threshold of audibility at a specified frequency or portion of an individual's hearing range above a previously established reference level (NMFS, 2016). Based on data from cetacean TTS measurements (see Finneran 2014 for a review), a TTS of 6 dB is considered the minimum threshold shift clearly larger than any day-to-day or session-to-session variation in a subject's normal hearing ability (Schlundt *et al.* 2000; Finneran *et al.* 2000; Finneran *et al.* 2002).

Depending on the degree (elevation of threshold in dB), duration (*i.e.*, recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious (similar to those discussed in auditory masking, below). For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that takes place during a time when the animal is traveling through the open ocean, where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during time when communication is critical for successful mother/calf interactions could have more serious impacts. We note that reduced hearing sensitivity as a simple function of aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.*, 2007), so we can infer that strategies exist for coping with this condition to some degree, though likely not without cost.

Behavioral Harassment

Exposure to noise from pile driving and removal also has the potential to behavioral disturb marine mammals. Disturbance may result in changing durations of surfacing and dives, number of blows per surfacing, moving direction and/or speed, reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding), visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping), avoidance of areas where sound sources are located, and/or flight responses. Pinnipeds may increase their haul-out time, possibly to avoid in-water disturbance (Thorson and Reyff 2006). These potential behavioral responses to sound are highly variable and context-specific and reactions, if any, depend on species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day, and many other factors (Richardson *et al.* 1995; Wartzok *et al.* 2003; Southall *et al.* 2007). For example, animals that are resting may show greater behavioral change in response to disturbing sound levels than animals that are highly motivated to remain in an area for feeding (Richardson *et al.*, 1995; NRC 2003; Wartzok *et al.*, 2003).

In 2016, Alaska DOT documented observations of marine mammals during construction activities (*i.e.*, pile driving and down-hole drilling) at the Kodiak Ferry Dock (see 80 FR 60636 for Final IHA Federal Register notice). In the marine mammal monitoring report for that project (ABR 2016), 1,281 Steller sea lions were observed within the Level B disturbance zone during pile driving or drilling (*i.e.*, documented as Level B take). Of these, 19 individuals demonstrated an alert behavior, seven were fleeing, and 19 swam away from the project site. All other animals (98 percent) were engaged in activities such as milling, foraging, or fighting and did not change their behavior. In addition, two sea lions approached within 20 meters of active vibratory pile driving activities. Three harbor seals were observed within the disturbance zone during pile-driving activities; none of them displayed disturbance behaviors. Fifteen killer whales and three

harbor porpoise were also observed within the Level B harassment zone during pile driving. The killer whales were travelling or milling while all harbor porpoises were travelling. No signs of disturbance were noted for either of these species. Given the similarities in activities and habitat and the fact the same species are involved, we expect similar behavioral responses of marine mammals to the specified activity.

Marine Mammal Habitat Effects

The project would occur in an active marine commercial and industrial area. The dock footprint is previously disturbed with abandoned dock structures associated with the former Alaska Pulp Mill in the area. Removing the timber piles would likely benefit the habitat by removing creosote-treated wood. Construction activities at the GPIP dock could have temporary impacts on marine mammal habitat and their prey as a result of elevated noise levels from pile driving and removal; however, any impacts are expected to be minor or temporary. Impact pile driving, the loudest noise source, would last for only 10 minutes per day for six non-consecutive days. No dredging or other construction-related activities that could increase turbidity beyond the localized impacts from pile driving would occur.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization through this IHA, which will inform both NMFS' consideration of whether the number of takes is "small" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, Section 3(18) of the MMPA defines "harassment" as: any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to

disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would primarily be by Level B harassment, as the use of pile hammers has the potential to result in disruption of behavioral patterns for individual marine mammals. As described above, TTS is also a form of Level B harassment. There is some potential for slight auditory injury (Level A harassment) to result (*e.g.*, PTS onset), primarily for mysticetes and/or high frequency species. Auditory injury is unlikely to occur for mid-frequency species and otariids (*i.e.*, Steller sea lions). The proposed mitigation and monitoring measures are expected to minimize the severity of such taking to the extent practicable. As described previously, no mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

Described in the most basic way, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of temporary or permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and (4) the number of days of activities. Below, we describe these components in more detail and present the proposed take estimate.

Acoustic Thresholds

Using the best available science, NMFS has developed acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be

reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.* 2007, Ellison *et al.* 2011). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 μ Pa (rms) for continuous (*e.g.* vibratory pile-driving) and above 160 dB re 1 μ Pa (rms) for non-explosive impulsive (*e.g.*, impact pile driving) sources. CBS's proposed activity includes the use of continuous (vibratory hammer) and impulsive (impact hammer) sources, and therefore the 120 and 160 dB re 1 μ Pa (rms) are applicable.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Technical Guidance, 2016) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive).

These thresholds were developed by compiling and synthesizing the best available science and soliciting input multiple times from both the public and peer reviewers to inform the

final technical guidance, and are provided in Table 2. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2016 Technical Guidance, which may be accessed at: <http://www.nmfs.noaa.gov/pr/acoustics/guidelines.htm>.

Table 2. Thresholds identifying the onset of Permanent Threshold Shift

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	<i>Cell 4</i> $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	<i>Cell 6</i> $L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	<i>Cell 8</i> $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	<i>Cell 10</i> $L_{E,OW,24h}$: 219 dB
<p>* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.</p> <p><u>Note:</u> Peak sound pressure (L_{pk}) has a reference value of 1 μPa, and cumulative sound exposure level (L_E) has a reference value of 1 μPa²s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript “flat” is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (i.e., varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.</p>		

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds.

When NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component (*i.e.*, accumulation of energy) in the new thresholds as well as the weighting functions, we developed an optional User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which will result in some degree of overestimate of Level A take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. We consider the calculated isopleths in conjunction with other operational or biological information to arrive at reasonable estimates of potential Level A harassment. For stationary sources such as pile driving, NMFS User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity (*i.e.*, accumulated all energy output by the activity in a 24-hr period), it would incur some degree of PTS. Inputs used in the User Spreadsheet and the resulting isopleths are provided in Table 3.

Table 3. Technical Guidance User Spreadsheet Inputs

USER SPREADSHEET INPUT		
	Vibratory Hammer	Impact Hammer
Spreadsheet Tab Used	A. Non-Impulse-Stat-Cont.	E.1. Impact pile driving
Source Level (Single Strike/shot SEL)	See Table 4	
Weighting Factor Adjustment (kHz)	2.5	2.0
a) Number of strikes per pile	N/A	400
a) Number of piles per day	N/A	1
Activity Duration (hours) within 24-h period	See Table 4	N/A
Propagation (xLogR)	15	15
Distance of source level measurement (meters) ⁺	10	10

Distances to Level A and Level B thresholds were calculated based on various source levels for a given activity and pile type (*e.g.*, impact hammering 48 in pile, vibratory removal of timber piles) and, for Level A harassment, accounted for the maximum duration of that activity per day using the spreadsheet tool developed by NMFS. For Level B harassment areas, distances were calculated using a practical spreading loss constant (15 log R) and source level. Once the distances to thresholds were calculated, total ensonified area was calculated. For all Level B and some Level A thresholds, land was a limiting factor in determining area. Table 4 contains all calculated distances to Level A and B harassment thresholds.

Table 4. Distances to Level A and B thresholds and resulting ensonified area.

		Distance (m) to Level A and Level B Thresholds					
Source Activity and Duration	Estimated Source Level at 10 meters (dB) ¹	Level A ²					Level B All Species
		Low-Frequency Cetaceans (m)	Mid-Frequency Cetaceans (m)	High-Frequency Cetaceans (m)	Phocid (m)	Otariid (m)	
Vibratory Pile Driving							
12 and 16-inch wood removal (5 hours per day)	155	8.0	0.7	11.8	4.8	0.3	2,154

30-inch steel temporary installation (3 hours per day)	166	30.6	2.7	45.3	18.6	1.3	11,659 ³
30-inch steel temporary removal (1 hour per day)	166	14.7	1.3	21.8	8.9	0.6	11,659 ³
30-inch steel permanent installation (2 hours per day)	166	23.4	2.1	34.5	14.2	1.0	11,659 ³
48-inch steel permanent installation (2 hours per day)	168.2	32.7	2.9	48.4	19.9	1.4	16,343 ³
Impact Pile Driving							
30-inch steel permanent installation (10 minutes per day)	196	859.2	30.6	1,023.5	459.8	33.5	859.2
48-inch steel permanent installation (10 minutes per day)	198.6	1,280.7	45.5	1,525.5	685.4	49.9	1,280.7

¹ Source levels (SLs) are derived from the Port of Anchorage test pile project (Austin et al. 2016, CH2M 2016) and Alaska Department of Transportation hydroacoustic studies (Denes et al. 2016). 30" pile driving SLs were used as a proxy for pile removal.

²The values provided here represent the distances at which an animal may incur PTS if that animal remained at that distance for the entire duration of the activity. For example, a humpback whale (low frequency cetacean) would have to remain 8 meters from timber piles being removed for 5 hours for PTS to occur.

³These represent calculated distances based on practical spreading model; however, land at the end of Silver Bay obstructs underwater sound transmission at approximately 9,500 m from the source.

Marine Mammal Occurrence

In this section, we provide the information about the presence, density, or group structure of marine mammals that will inform the take calculations.

Data on marine mammals in the project area is limited. Land-based surveys conducted at Sitka's Whale Park occurred from September through May, annually, from 1994 to 2000 (Straley and Pendell, 2017). From 2000 to 2016, Straley also collected marine mammal data from small vessels throughout the year. There are no density data available; therefore, probability of occurrence based on group sightings and typical group sizes were used in take calculations (Table 5).

Table 5. Marine mammal data from land-based surveys at Sitka's Whale Park from September through May, annually, from 1994-2000.

Common name	Months Sighted	Avg. count per month (Oct, Nov,	Typical Group Size	Max group size
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		Dec)		
Humpback whale	September – April	50, 116, 101	2-4	unknown
Killer whale	October - March	12, 12, 4	4-8	8
Harbor porpoise	September, March, April	7, 0, 0	5	8
Steller sea lion	September - April	10, 12, 107	1-2	100
Harbor seal	September - April	1, 1, 0	1-2	2

¹ Only months when the project would occur are included here. For full counts, please see section 4 in CBS's application.

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate.

Because density data are not available for this area, we used group sighting data as an indicator of how often marine mammals may be present during the 16 days of pile driving/removing activity in consideration of the Level A and B harassment zones. We also considered typical group size to determine how many animals may be present on any given day. For all species, we used the following equation to estimate the number of animals, by species, potentially taken from exposure to pile driving and removing noise: *Estimated Take = Number of animals x number of days animals are expected during pile activity by type* (Table 6).

The Sitka Whale Park surveys found humpback whale groups may include up to four individuals. Based on sighting frequency which indicates this species is present more often during winter months when the project would occur, we conservatively estimate that a group of 4 humpback whales may occur within the Level A harassment zone (1,210 m and 1,803 m for 30-in and 48-in pile driving respectively) on any two of the six days of impact pile driving and in the Level B harassment zone on any of the 16 days of pile activities. Therefore, Level A take equals 4 whales times 2 days while Level B take equals 4 whales times 16 days.

For killer whales, it is assumed eight killer whales could be present within the Level B harassment zone on any two days of pile activity; therefore, we are proposing to authorize 16

takes. No Level A take is anticipated due to proposed shut down mitigation measures (see *Mitigation* section).

Harbor porpoise typically travel in groups of five and we anticipate a group could enter the Level A zone on two of the six days of impact pile driving and another group could be present within the Level B zone on two days of the project. Therefore, we anticipate ten Level A takes (five animals x two days) and ten Level B takes (five animals x two days) of harbor porpoise.

Steller sea lions are common in the area during the proposed work with one to ten animals present on any given day of work. We assume that on any day of the 16 days of pile driving, 10 Steller sea lions could be present within Sawmill Cove and another group of 4 Steller sea lions could be present in the farther reaches of the disturbance zone, for a combined Level B exposure of 14 Steller sea lions on each day of pile driving. Therefore, over the course of 16 days of pile driving, we anticipate 224 sea lions may be taken (14 animals x 16 days); however, as described above, this is likely representative of the number of exposures, not individuals taken. No Level A takes of Steller sea lions are anticipated from impact pile driving due to the small harassment zone and mitigation shut down measures (see *Mitigation* section).

Harbor seals are found in the action area throughout the year but in low numbers. Group size is typically one to two animals. It is anticipated that two harbor seals could be present within the Level A zone every other day of the 6 days of impact pile driving. It is also assumed that a group of 2 harbor seals could be encountered in the Level B disturbance zone during the 16 days of pile driving. Therefore, we anticipate 6 Level A takes (2 animals x 3 days) and 32 Level B takes (2 animals x 16 days) of harbor seals.

Duration is a strong driver in identifying distances to Level A thresholds and this must be balanced with expected animal movement. Although the Technical Guidance user spreadsheet identified Level A harassment distances from vibratory pile driving and removal, these distances are incredibly close to the source and an animal would have to remain that close for extended durations (1-5 hours). In contrast, impact threshold distances are much larger and consider only 10 minutes (400 strikes) of activity, making a Level A take more probabilistic. The CBS proposed to shut down operations should a marine mammal enter the Level A zone (0.3 to 48.4 m depending on pile type and if activity is vibratory pile driving or removing) to avoid Level A take. Because we do not expect a marine mammal to remain at these close distances for long periods of time, we do not believe the potential for Level A take exists and; therefore we are not authorizing Level A take from vibratory pile activities and we are not requiring CBS shut down during any activities involving a vibratory hammer unless an animal comes within 10 m which is a zone established to prevent non-auditory physical injury.

For harbor seals and Steller sea lions, the number of animals potentially present likely reflects the same individuals occurring over multiple days; therefore the number of takes likely represents exposures versus individuals. For all cetacean species, it is likely the calculated takes do reflect the number of individuals exposed because they would be expected to be transiting through the action area, not lingering like pinnipeds.

For purposes of ESA consultation, we looked at probability of Steller sea lions and humpback whales from each DPS that may be found in the action area. For Steller sea lions, we determined the probability of an animal being from the wDPS to be 2 percent while the remaining animals would be from the eDPS (see *Description of Marine Mammals* section). We also calculated the number of humpback whales that could be from the Mexico and Hawaii DPS.

Wade et al. (2016) analyzed humpback whale movements throughout the North Pacific Ocean between winter breeding areas and summer feeding areas, using a comprehensive photo-identification study of humpback whales in 2004-2006 during the SPLASH project (Structure of Populations, Levels of Abundance and Status of Humpbacks). The analysis found that humpback whales off Southeast Alaska are most likely to be from the Hawaii DPS (93.9% probability) while the Mexico DPS whales have a 6.1 percent probability of occurrence.

Table 6. Estimated take of marine mammals, by stock, incidental to pile removal and pile driving.

Common name	Stock/DPS (Nbest)	Level A	Level B	Percent of Stock (Level B)
Humpback whale	Hawaii DPS (11,398)	7	60	0.5
	Mexico DPS (3,264)	1	4	0.12
Killer whale	Alaska Resident (2,347)	0	16	0.68*
	Northern Resident (261)			6.1*
	Gulf of Alaska, Aleutian Islands, Bering Sea (587)			2.7*
	West Coast Transient (243)			6.5*
Harbor porpoise	Southeast Alaska (975)	10	10	1.0
Steller sea lion	Western U.S. (36,551)	0	5	0.14
	Eastern U.S. (49,497)	0	219	0.44
Harbor seal	Sitka/Chatham Strait (14,855)	6	32	0.22

*These percentages assume all 16 takes comes from any given stock.

Proposed Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, “and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking” for certain subsistence uses. NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or

other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation can ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully balance two primary factors: (1) the manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat – which considers the nature of the potential adverse impact being mitigated (likelihood, scope, range), as well as the likelihood that the measure will be effective if implemented; and the likelihood of effective implementation, and; (2) the practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The following mitigation measures, designed to minimize noise exposure, would be included in the IHA:

- CBS will first attempt to direct pull old, abandoned piles that would minimize noise input into the marine environment; if those efforts prove to be ineffective, they may proceed with a vibratory hammer.
- CBS will operate the vibratory hammer at a reduced energy setting (30 to 50 percent of its rated energy).
- CBS will use a softening material (*e.g.*, high-density polyethylene (HDPE) or ultra-high-molecular-weight polyethylene on all templates to eliminate steel on steel noise generation.

- A “soft start” technique will be used at the beginning of each pile installation to allow any marine mammal that may be in the immediate area to leave before hammering at full energy. CBS is proposing to initiate noise from vibratory hammers for 15 seconds at reduced energy followed by 1-minute waiting period. The procedure will be repeated two additional times. If an impact hammer is used, CBS will be required to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a one minute waiting period, then two subsequent 3–strike sets. If any marine mammal is sighted within a shut-down zone during the 30 minute survey prior to pile driving, or during the soft start, CBS will delay pile-driving until the animal is confirmed to have moved outside and on a path away from the area or if 15 minutes (for pinnipeds or small cetaceans) or 30 minutes (for large cetaceans) have elapsed since the last sighting of the marine mammal within the shut-downzone. This soft-start will be applied prior to beginning pile driving activities each day or when pile driving hammers have been idle for more than 30 minutes.
- CBS will drive all piles with a vibratory hammer to the maximum extent possible (*i.e.*, until a desired depth is achieved or to refusal) prior to using an impact hammer. CBS will also use the minimum impact hammer energy needed to safely install the piles.
- CBS will implement the shut-down zones identified in Table 7 to minimize harassment.

Table 7. Proposed pile driving shut down zones designed to minimize Level A take.

	Shutdown Zones in Meters				
Source	Low-Frequency Cetaceans (humpback whale)	Mid-Frequency Cetaceans (killer whale)	High-Frequency Cetaceans (harbor porpoise)	Phocid Pinnipeds (harbor seal)	Otariid Pinnipeds (Steller sea lion)
Vibratory Pile Driving					
All	10 m				
Impact Pile Driving					

30-inch steel (installation)	200 ¹	50	200 ¹	150 ¹	50
48-inch steel (installation)	200 ¹	100	200 ¹	150 ¹	50

¹Indicates a shutdown zone that does not encompass the entire Level A zone. The CBS is requesting Level A take of humpback whales, harbor porpoises, and harbor seals associated with impact pile driving.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth, "requirements pertaining to the monitoring and reporting of such taking." The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Effective reporting is critical to both compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density).
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation,

ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas).

- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors.
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks.
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat).
- Mitigation and monitoring effectiveness.

Monitoring Protocols – Monitoring would be conducted before, during, and after pile driving and removal activities. Monitoring will initiate 30 minutes prior to pile driving through 30 minutes post-completion of pile driving activities. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than thirty minutes.

One land-based protected species observer (PSO) will be present during all pile activity; during impact pile driving, a secondary boat-based PSO will be on watch. The land-based PSO will be located at the GPIP construction site and will be able to view the area across Silver Bay to the west and east of Sugarloaf Point and monitor the mouth of Silver Bay to determine whether marine mammals enter the action area from East Channel of Sitka Sound (the entrance monitoring zone). The PSO will have no other primary duties than watching for and reporting on events related to marine mammals. The PSO will scan the monitoring zone for the presence of

listed species for 30 minutes before any pile driving or removal activities take place. Each day prior to commencing in-water work the PSO will conduct a radio check with the construction foreman or superintendent. The PSO will brief the foreman or supervisor as to the shutdown procedures if any marine mammals are observed likely to enter or within a shutdown zone, and will have the foreman brief the crew, requesting that the crew notify the PSO when a marine mammal is spotted. CBS proposed the PSO will work in shifts lasting no longer than 4 hours with at least a 1-hour break between shifts, and will not perform duties as an PSO for more than 12 hours in a 24-hr period (to reduce PSO fatigue). The PSO will remain onsite each day until all in-water pile driving/removal is completed.

No less than 30 minutes prior to any pile driving, the boat-based PSO will begin monitoring the Level A and B harassment zones. A boat-based PSO is not required during timber pile removal due to limited harassment zones. This PSO will transit to the head of Silver Bay to ensure that there are no marine mammals for which take is not authorized or to document species for which take is authorized. The boat-based PSO will communicate with the construction foreman or superintendent once the area is determined to be clear and pile driving activities can begin. The boat-based PSO will then transit back to the construction site and spend the rest of the pile driving time monitoring the area from the boat (see Figure 3 in CBS's application).

If any marine mammals are present within a shutdown zone, pile driving and removal activities will not begin until the animal(s) has left the shutdown zone or no marine mammals have been observed in the shutdown zone for 15 minutes (for pinnipeds) or 30 minutes (for cetaceans). The boat-based PSO will remain near the mouth of Sawmill Cove for the duration of pile driving to monitor for any animals approaching the area.

The following measures also apply to visual monitoring:

(1) Monitoring will be conducted by independent (*i.e.*, not construction personnel) qualified observers, who will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator. At least one observer must have prior experience working as an observer. Other observers may substitute education (undergraduate degree in biological science or related field) or training for experience. In addition, all PSOs must have:

(a) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;

(b) Advanced education in biological science or related field (undergraduate degree or higher required);

(c) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);

(d) Experience or training in the field identification of marine mammals, including the identification of behaviors;

(e) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

(f) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and

(g) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

In addition, CBS must submit to NMFS OPR the curriculum vitae (CV) of all observers prior to monitoring.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as “an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival” (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be “taken” through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS’s implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Pile driving and removal would result in the harassment of marine mammals within the designated harassment zones due to increased noise levels during 16 days. Six days of work are

dedicated to removing 280 old piles, which would emit low levels of noise into the aquatic environment if removed via a vibratory hammer. Vibratory pile driving, which also has relatively low source levels, would occur for only 2 hours per day and there would be at least one day in between pile driving activity when installing the permanent piles. Impact pile driving would result in the loudest sound levels; however, CBS would install only 6 piles with an impact hammer (four 30-in and two 48-in piles) to proof the pile after driving it with a vibratory hammer. Proofing a pile is relatively short-term activity with 400 strikes occurring over 10 minutes per pile. Considering this and the fact only one pile would be installed per day, if PTS occurs, it is likely slight PTS (*e.g.*, PTS onset). Due to the brief duration of expected exposure, any Level B harassment would be temporary and any behavioral changes as a result are expected to be minor.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized.
- The number of piles in the design has been reduced to the lowest amount practicable (other designs required more piles); therefore, the amount of pile activity is minimal at 16 days over the course of 3 months.
- Extremely limited impact pile driving would occur (ten minutes per day for six non-consecutive days).
- The project and ensonified areas include a cove and dead-end bay (Silver Bay) with no significant marine mammal habitat.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals.

NMFS is proposing to authorize a very small amount of Level A takes of marine mammals. Level B takes are more numerous and still only constitute between 0.12 and 6.5 percent of a given stock (Table 7). For pinnipeds, the number of takes likely represents repeated exposures of a smaller number of animals; therefore, the percent of stock taken is likely even smaller. Finally, the area where these takes may occur represents a negligible area with respect to each stock's range; therefore, it is unlikely a larger percentage of a stock's population would move through the action area.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

Alaska Natives have traditionally harvested subsistence resources, including sea lions and harbor seals. In 2012 (the most recent year for which information is available), the community of Sitka had an estimated subsistence take of 49 harbor seals and 1 Steller sea lion (Wolf *et al.* 2013). CBS contacted the Alaska Harbor Seal Commission, the Alaska Sea Otter and Steller Sea Lion Commission, and the Sitka Tribe of Alaska and these organizations expressed no concerns about the project. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. § 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally, in this case with the Alaska Regional Office, whenever we propose to authorize take for endangered or threatened species.

NMFS is proposing to authorize take of the wDPS of Steller sea lions and the humpback whale Mexico DPS, which are listed under the ESA. As such, the Permit and Conservation Division has requested initiation of Section 7 consultation with the NMFS Alaska Regional Office for the issuance of this IHA. NMFS will conclude the ESA consultation prior to reaching a determination regarding the proposed issuance of the authorization.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to CBS for conducting pile driving and removal, Sitka, from October 1, 2017- December 31, 2017, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. This section contains the conditions that would be included in the IHA itself. The wording contained in this section is proposed for inclusion in the IHA (if issued).

1. This IHA is valid only for takes of marine mammals incidental to pile driving and pile removal associated with the Gary Paxton Industrial Park Dock Modification Project in Sawmill Cove, Alaska.
2. General Conditions
 - (a) A copy of this IHA must be in the possession of the CBS, its designees, and work crew personnel operating under the authority of this IHA.
 - (b) The species authorized for taking are the humpback whale (*Megaptera novaeangliae*), killer whale (*Orcinus orca*), harbor porpoise (*Phocoena phocoena*), harbor seal (*Phoca vitulina*), and Steller sea lion (*Eumetopias jubatus*)
 - (c) The taking, by Level A and B harassment is authorized for humpback whales, harbor porpoises, and harbor seal. Take, by Level B harassment only, is authorized for killer whales and Steller sea lions.
 - (d) The taking by serious injury or death of any of the species listed in condition 2(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (e) The take, by Level A harassment, of killer whales and Steller sea lions is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (f) The CBS shall conduct briefings between construction supervisors and crews, marine mammal monitoring team prior to the start of all pile activities, and when new personnel join the work, in order to explain responsibilities, communication procedures, marine mammal monitoring protocol, and operational procedures.
3. Mitigation Measures

The holder of this Authorization is required to implement the following mitigation measures:

 - (a) CBS will first attempt to direct pull old, abandoned piles; if those efforts prove

to be ineffective, they may proceed with a vibratory hammer.

(b) CBS will operate the vibratory hammer during pile driving at a reduced energy setting (30-50 percent).

(c) CBS will use a softening material (*e.g.*, high-density polyethylene (HDPE) or ultra-high-molecular-weight polyethylene (UHMW)) on all templates to eliminate steel on steel noise generation.

(d) A “soft start” technique will be used at the beginning of each pile installation to allow any marine mammal that may be in the immediate area to leave before hammering at full energy. The soft start requires CBS to initiate noise from vibratory hammers for 15 seconds at reduced energy followed by 1-minute waiting period. The procedure will be repeated two additional times. If an impact hammer is used, CBS will be required to provide an initial set of three strikes from the impact hammer at 40 percent energy, followed by a one minute waiting period, then two subsequent 3–strike sets. This soft-start will be applied prior to beginning pile driving activities each day or when pile driving hammers have been idle for more than 30 minutes.

(e) If any marine mammal is sighted within a shut-down zone prior to pile-driving, or during the soft start, CBS will delay pile-driving until the animal is confirmed to have moved outside and on a path away from the area or if 15 minutes (for pinnipeds or small cetaceans) or 30 minutes (for large cetaceans) have elapsed since the last sighting of the marine mammal within the safety zone.

(f) CBS will drive all piles with a vibratory hammer until a desired depth is achieved or to refusal prior to using an impact hammer. CBS will also use the minimum impact hammer energy needed to safely install the piles.

(g) For all pile driving and pile removal activities, the entity shall implement a minimum shutdown zone of 10 m radius around the pile. If a marine mammal comes within or approaches the shutdown zone, such operations shall cease. For impact pile driving, CBS shall implement a shutdown zone based on species observed (See Table 2 for minimum radial distances required for shutdown zones).

4. Monitoring

The holder of this Authorization is required to conduct marine mammal monitoring during all pile driving and pile removal activities. Monitoring and reporting shall be conducted in accordance with the application.

(a) One land-based PSO and one boat-based PSO will be used to monitor the area during all pile driving and removing the temporary piles (no boat-based PSO is required during timber pile removal). The land-based PSO will be located at the GPIP construction site.

(b) The land-based PSO will scan the monitoring zone for the presence of listed species for 30 minutes before, during, and 30 minutes after any pile driving or removal activities take place.

(c) The land-based PSO will work in shifts lasting no longer than 4 hours with at least a 1-hour break between shifts, and will not perform duties as a PSO for more than 12 hours in a 24-hr period. The PSO will remain onsite each day until all in-water pile driving/removal is completed.

(d) No less than 30 minutes prior to any pile driving, the boat-based PSO will begin monitoring the Level B harassment zone. Note a boat-based PSO is not required during timber pile removal. This PSO will transit to the head of Silver Bay to ensure there are no marine mammals for which take is not authorized or to document species for which take is authorized. The boat-based PSO will communicate with the construction foreman or superintendent once the area is determined to be clear and pile driving activities can begin. The boat-based PSO will then transit back to the mouth of Sawmill Cove and spend the rest of the pile driving time monitoring the area from the boat.

(e) Monitoring will be conducted by independent (*i.e.*, not construction personnel) qualified observers, who will be placed at the best vantage point(s) practicable to monitor for marine mammals and implement shutdown/delay procedures when applicable by calling for the shutdown to the hammer operator. At least one observer must have prior experience working as an observer. Other observers may substitute education (undergraduate degree in biological science or related field) or training for experience. In addition, all PSOs must have:

- (i) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;
- (ii) Advanced education in biological science or related field (undergraduate degree or higher required);
- (iii) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience);
- (iv) Experience or training in the field identification of marine mammals, including the identification of behaviors;

- (v) Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- (vi) Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates and times when in-water construction activities were suspended to avoid potential incidental injury from construction sound of marine mammals observed within a defined shutdown zone; and marine mammal behavior; and
- (vii) Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

(f) In addition, CBS must submit to NMFS the curriculum vitae (CV) of all observers prior to monitoring.

5. Reporting

The holder of this Authorization is required to:

- (a) Submit a draft report to NMFS on all monitoring conducted under the IHA within 90 calendar days of the completion of marine mammal monitoring or sixty days prior to the issuance of any subsequent IHA for this project, whichever comes first. A final report shall be prepared and submitted to NMFS within thirty days following resolution of comments on the draft report from NMFS. This report shall include details within the Monitoring Plan and the following:
 - (i) The amount, by species, of Level A and B takes documented. Total Level B take should be corrected for any area unobserved.
 - (ii) Detailed information about any implementation of shutdowns, including the distance of animals to the pile driving and removal activities and description of specific actions that ensued and resulting behavior of the animal, if any.
 - (iii) Description of attempts to distinguish between the number of individual animals taken and the number of incidences of take, such as ability to track groups or individuals.
- (b) Reporting injured or dead marine mammals:
 - (i) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as a serious injury, or mortality, CBS shall immediately cease the specified activities and report the incident to the Office of Protected Resources, NMFS, and

the Alaska Stranding Coordinator, NMFS. The report must include the following information:

1. Time and date of the incident;
2. Description of the incident;
3. Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
4. Description of all marine mammal observations and active sound source use in the 24 hours preceding the incident;
5. Species identification or description of the animal(s) involved;
6. Fate of the animal(s); and
7. Photographs or video footage of the animal(s).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with CBS to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. CBS may not resume their activities until notified by NMFS.

- (ii) In the event that CBS discovers an injured or dead marine mammal, and the PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), CBS shall immediately report the incident to the Office of Protected Resources, NMFS, and the Alaska Stranding Coordinator, NMFS.

The report must include the same information identified in 5(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with CBS to determine whether additional mitigation measures or modifications to the activities are appropriate.

- (iii) In the event that CBS discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), CBS shall report the incident to the Office of Protected Resources, NMFS, and the Alaska Stranding Coordinator, NMFS, within 24 hours of the discovery. CBS shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

6. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.

Request for Public Comments

We request comment on our analyses, the draft authorization, and any other aspect of this Notice of Proposed IHA for the proposed pile driving and removal. Please include with your comments any supporting data or literature citations to help inform our final decision on the request for MMPA authorization.

Dated: July 20, 2017.

Catherine Marzin,

Acting Deputy Director, Office of Protected Resources,

National Marine Fisheries Service.

[FR Doc. 2017-15659 Filed: 7/25/2017 8:45 am; Publication Date: 7/26/2017]